

Notice of Allowability

Application No.

10/565,557

Examiner

Sun Jae Y. Loewe

Applicant(s)

THOMAS ET AL.

Art Unit

1626

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to amendment filed on 11-21-2007 and interview dated 12-5-2007.
2. ☒ The allowed claim(s) is/are 1, 10, 11, 15-18 and 29 now renumbered as claims 1-8.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☒ Interview Summary (PTO-413), Paper No./Mail Date 2007125.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

DETAILED ACTION

1. Claims 1, 10, 11, 15 and 16-18 are pending in the instant application. New claim 29 is added herein by Examiner's Amendment. Claims 2-4, 6 and 28 were cancelled by amendment filed on November 21, 2007. Claims 5, 7-9, 12-14 and 19-27 were cancelled by amendment filed on July 25, 2007.

Response to Amendment

2. The amendment filed on November 21, 2007 overcomes the grounds of rejection set forth in the office action dated September 20, 2007. The claim objections, claim rejection under 25 USC 112 1st paragraph enablement, and claim rejection under 35 USC 112 2nd paragraph are hereby withdrawn.

Examiner's Amendment

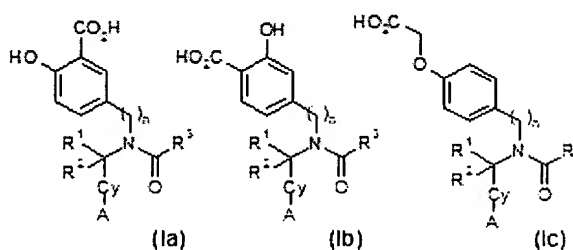
3. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Jacob Doughty on December 5, 2005.

The application has been amended as follows:

a) Claim 1 - Amend to read as follows:

“Claim 1. A method of treating type II diabetes or obesity, comprising administering to a subject in need of such treatment an effective amount of at least one member selected from the group consisting of an aryl dicarboxamide of formula (Ia), formula (Ib), and formula (Ic):



a geometrical isomer thereof, an optically active form thereof, and a pharmaceutically acceptable salt thereof, wherein:

A is an aminocarbonyl moiety of the formula $-\text{CO}-\text{NHR}^6$, wherein R^6 is a phenyl group attached directly or through an alkylene group, a phenyl-phenoxy group or an octyl group;

Cy is a phenyl group or a thiazole-phenyl group;

n is either 0 or 1;

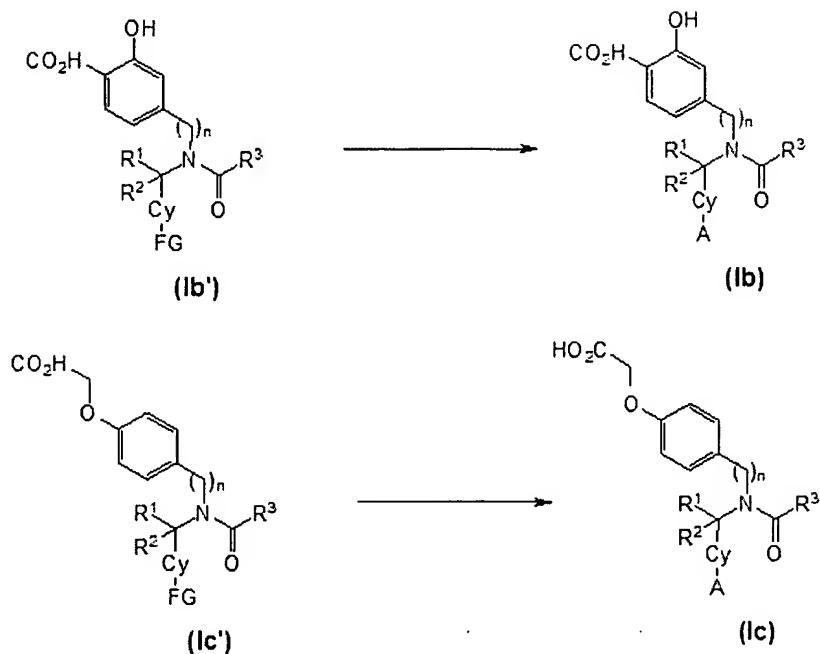
R^1 and R^2 are hydrogen;

R^3 is selected from the group consisting of: (i) an alkyl group optionally substituted with an amino group, and (ii) a cyclopentyl group, a cyclohexyl group, a phenyl group, or a pyridyl group, attached directly or through an alkylene group or an oxo group, and optionally substituted with a cyano group or a fluoromethyl group.

”

b) Claim 18 – Amend to read as follows

“Claim 18. A method of preparing the aryl dicarboxamide of



wherein FG is A or a leaving group,

wherein:

A is an aminocarbonyl moiety of the formula $-\text{CO}-\text{NHR}^6$, wherein R⁶ is a phenyl group attached directly or through an alkylene group, a phenyl-phenoxy group, or an octyl group;

Cy is a phenyl group or a thiazole-phenyl group;

n is either 0 or 1;

R¹ and R² are hydrogen; and

R³ is selected from the group consisting of: (i) an alkyl group optionally substituted with an amino group, and (ii) a cyclopentyl group, a cyclohexyl group, a phenyl group, or a pyridyl group, attached directly or through an alkylene group or an oxo group, and optionally substituted with a cyano group or a fluoromethyl group.

c) Add claim 29 as shown below:

“Claim 29. A method of treating type II diabetes or obesity, comprising administering to a subject in need of such treatment an effective amount of at least one member selected from the group consisting of:

5-[(3-cyclopentylpropanoyl)(4-{[(4-phenoxybenzyl)amino]carbonyl}benzyl)amino]-2-hydroxybenzoic acid;

5-[(3-cyclopentylpropanoyl)(4-{[(4-phenoxybenzyl)amino]carbonyl}benzyl)amino]-2-hydroxybenzoic acid;

[4-({[2-(4-{[(4-pentylbenzyl)amino]carbonyl}phenyl)-1,3-thiazol-4-yl]methyl}-[(2E)-3-phenylprop-2-enoyl]amino)methyl]phenoxy]acetic acid;

5-[(3-cyclopentylpropanoyl)(4-{[(4-pentylbenzyl)amino]carbonyl}benzyl)amino]-2-hydroxybenzoic acid;

2-hydroxy-5-{(4-{[(4-pentylbenzyl)amino]carbonyl}benzyl)[4-(trifluoromethyl)-benzoyl]amino}benzoic acid;

2-hydroxy-5-[[[4-{{[(4-phenoxybenzyl)amino]carbonyl}-1,3-thiazol-2-yl)methyl](3-phenylpropanoyl)amino]benzoic acid;

5-{benzoyl[[4-{{[(4-phenoxybenzyl)amino]carbonyl}-1,3-thiazol-2-yl)methyl]-amino}-2-hydroxybenzoic acid;

2-hydroxy-5-{{[4-{{[(4-phenoxybenzyl)amino]carbonyl}-1,3-thiazol-2-yl)methyl][4-(trifluoromethyl)benzoyl]amino}benzoic acid;

5-[(cyclohexylcarbonyl)(4-{{[(4-phenoxybenzyl)amino]carbonyl}benzyl)amino]-2-hydroxybenzoic acid;

2-hydroxy-5-[[4-{{[(4-phenoxybenzyl)amino]carbonyl}benzyl}(3-phenylpropanoyl)-amino]benzoic acid;

5-[benzoyl(4-{{[(4-phenoxybenzyl)amino]carbonyl}benzyl)amino]-2-hydroxybenzoic acid;

5-[acetyl(4-{{[(4-phenoxybenzyl)amino]carbonyl}benzyl)amino]-2-hydroxybenzoic acid;

5-[(4-cyanobenzoyl)(4-{{[(4-phenoxybenzyl)amino]carbonyl}benzyl)amino]-2-hydroxybenzoic acid;

2-hydroxy-5-[(phenoxyacetyl)(4-{{[(4-phenoxybenzyl)amino]carbonyl}benzyl)-amino]-benzoic acid;

2-hydroxy-5-{{[4-{{[(4-phenoxybenzyl)amino]carbonyl}benzyl)[4-(trifluoromethyl)benzoyl]amino}benzoic acid;

2-hydroxy-5-((4-(((4-phenoxybenzyl)amino)carbonyl)benzyl)((2*E*)-3-phenylprop-2-enoyl)amino)benzoic acid;

5-[(*N,N*-dimethylglycyl)(4-(((4-phenoxybenzyl)amino)carbonyl)benzyl)amino]-2-hydroxybenzoic acid;

2-hydroxy-5-[(3-methylbut-2-enoyl)(4-(((4-phenoxybenzyl)amino)carbonyl)benzyl)-amino]benzoic acid;

2-hydroxy-5-({4-[(octylamino)carbonyl]benzyl}(phenoxyacetyl)amino)methyl}-benzoic acid;

2-hydroxy-5-({4-[(octylamino)carbonyl]benzyl}[4-(trifluoromethyl)benzoyl]-amino)methyl)benzoic acid;

2-hydroxy-5-({4-[(octylamino)carbonyl]benzyl}[(2*E*)-3-phenylprop-2-enoyl]-amino)methyl)benzoic acid;

5-{{{3-cyclopentylpropanoyl}(4-(((4-pentylbenzyl)amino)carbonyl)benzyl)-amino)methyl}-2-hydroxybenzoic acid;

2-hydroxy-5-(((4-(((4-pentylbenzyl)amino)carbonyl)benzyl)(phenoxyacetyl)-amino)methyl)benzoic acid;

2-hydroxy-5-((4-(((4-pentylbenzyl)amino)carbonyl)benzyl)[4-(trifluoromethyl)benzoyl]amino)methyl)benzoic acid;

2-hydroxy-5-(((3-methylbut-2-enoyl)(4-(((4-pentylbenzyl)amino)carbonyl)-benzyl)amino)methyl)benzoic acid;

5-([(3-cyclopentylpropanoyl)(4-([(4-phenylbutyl)amino]carbonyl}benzyl)-
amino)methyl]-2-hydroxybenzoic acid;

2-hydroxy-5-([(4-([(4-pentylbenzyl)amino]carbonyl}-1,3-thiazol-2-yl)methyl)[(2*E*)-
3-phenylprop-2-enoyl]amino)methyl]benzoic acid;

[4-([(4-([(4-phenoxybenzyl)amino]carbonyl}benzyl)[4-(trifluoromethyl)benzoyl]-
amino)methyl]phenoxy)acetic acid;

2-hydroxy-5-[(4-([(4-pentylbenzyl)amino]carbonyl}benzyl)(3-phenylpropanoyl)-
amino]benzoic acid;

4-[(3-cyclopentylpropanoyl)(4-([(4-pentylbenzyl)amino]carbonyl}benzyl)amino)-2-
hydroxybenzoic acid;

2-hydroxy-4-[(4-([(4-pentylbenzyl)amino]carbonyl}benzyl)[4-(trifluoromethyl)-
benzoyl]amino]benzoic acid;

2-hydroxy-5-[[2-(4-([(4-pentylbenzyl)amino]carbonyl}phenyl)-1,3-thiazol-4-
yl)methyl](phenoxyacetyl)amino]benzoic acid;

2-hydroxy-5-[[2-(4-([(4-pentylbenzyl)amino]carbonyl}phenyl)-1,3-thiazol-4-
yl)methyl][4-(trifluoromethyl)benzoyl]amino]benzoic acid;

5-([(6-chloropyridin-3-yl)carbonyl]{[2-(4-([(4-pentylbenzyl)amino]carbonyl}-phenyl)-
1,3-thiazol-4-yl)methyl}amino)-2-hydroxybenzoic acid;

5-((4-cyanobenzoyl){[2-(4-([(4-pentylbenzyl)amino]carbonyl}phenyl)-1,3-thiazol-4-
yl)methyl}amino)-2-hydroxybenzoic acid;

2-hydroxy-5-((3-methylbut-2-enoyl){[2-(4-{[(4-pentylbenzyl)amino]carbonyl}-phenyl)-1,3-thiazol-4-yl]methyl}amino)benzoic acid;

5-((3-cyclopentylpropanoyl){[2-(4-{[(4-phenoxybenzyl)amino]carbonyl}phenyl)-1,3-thiazol-4-yl]methyl}amino)-2-hydroxybenzoic acid;

2-hydroxy-5-{{[2-(4-{[(4-phenoxybenzyl)amino]carbonyl}phenyl)-1,3-thiazol-4-yl]methyl}{4-(trifluoromethyl)benzoyl}amino}benzoic acid;

2-hydroxy-5-[[2-(4-{[(4-phenoxybenzyl)amino]carbonyl}phenyl)-1,3-thiazol-4-yl]methyl}(3-phenylpropanoyl)amino]benzoic acid;

5-(benzoyl{[2-(4-{[(4-phenoxybenzyl)amino]carbonyl}phenyl)-1,3-thiazol-4-yl]methyl}amino)-2-hydroxybenzoic acid;

[4-({[2-(4-{[(4-pentylbenzyl)amino]carbonyl}phenyl)-1,3-thiazol-4-yl]methyl}{4-(trifluoromethyl)benzoyl}amino)methyl}phenoxy]acetic acid;

(4-({[2-(4-{[(4-pentylbenzyl)amino]carbonyl}phenyl)-1,3-thiazol-4-yl]methyl}(3-phenylpropanoyl)amino)methyl}phenoxy)acetic acid;

[4-({[2-(4-{[(4-phenylbutyl)amino]carbonyl}phenyl)-1,3-thiazol-4-yl]methyl}{4-(trifluoromethyl)benzoyl}amino)methyl}phenoxy]acetic acid;

(4-({[2-(4-{[(4-phenylbutyl)amino]carbonyl}phenyl)-1,3-thiazol-4-yl]methyl}(3-phenylpropanoyl)amino)methyl}phenoxy)acetic acid;

[4-({[2-(4-{[(4-phenylbutyl)amino]carbonyl}phenyl)-1,3-thiazol-4-yl]methyl}{(2E)-3-phenylprop-2-enoyl}amino)methyl}phenoxy]acetic acid;

{4-[(N,N-dimethylglycyl){2-(4-{[(4-phenylbutyl)amino]carbonyl}phenyl)-1,3-thiazol-4-yl)methyl}amino)methyl]phenoxy}acetic acid;

{4-[(cyclohexylcarbonyl){2-(4-{[(4-phenylbutyl)amino]carbonyl}phenyl)-1,3-thiazol-4-yl)methyl}amino)methyl]phenoxy}acetic acid;

{4-[(phenoxyacetyl){2-(4-{[(4-phenoxybenzyl)amino]carbonyl}phenyl)-1,3-thiazol-4-yl)methyl}amino)methyl]phenoxy}acetic acid;

[4-({[(2-(4-{[(4-phenoxybenzyl)amino]carbonyl}phenyl)-1,3-thiazol-4-yl)methyl}[4-(trifluoromethyl)benzoyl]amino)methyl]phenoxy}acetic acid;

(4-{[(2-(4-{[(4-phenoxybenzyl)amino]carbonyl}phenyl)-1,3-thiazol-4-yl)methyl}(3-phenylpropanoyl)amino)methyl]phenoxy}acetic acid;

{4-[(cyclohexylcarbonyl){2-(4-{[(4-phenoxybenzyl)amino]carbonyl}phenyl)-1,3-thiazol-4-yl)methyl}amino)methyl]phenoxy}acetic acid;

[4-({[(2-(4-{[(octylamino)carbonyl]phenyl)-1,3-thiazol-4-yl)methyl}[4-(trifluoromethyl)benzoyl]amino)methyl]phenoxy}acetic acid; and

(4-{[(2-(4-{[(octylamino)carbonyl]phenyl)-1,3-thiazol-4-yl)methyl}(3-phenylpropanoyl)amino)methyl]phenoxy}acetic acid;

or a geometrical isomer thereof;

an optically active form thereof; or

a pharmaceutically acceptable salt thereof. //

Reasons for Allowance

4. The following is an examiner's statement of reasons for allowance.

The products are novel and unobvious over the prior art. The closest art is taught by Swinnen et al.; the compounds do not meet the limitation for the substituents to the phenyl core nor the limitation for variable R⁶.

The method drawn to treatment of obesity is allowable because an art recognized correlation exists protein tyrosine phosphatase 1B inhibition and the treatment of the claimed disease (Elchebly et al.). The method drawn to treatment of diabetes 2 is allowable because an art recognized correlation exists protein tyrosine phosphatase 1B inhibition and the treatment of the claimed disease (ISIS 113715, see <http://www.centerwatch.com/patient/nmtresults/nmt030929.html>).

5. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sun Jae Y. Loewe whose telephone number is (571) 272-9074. The examiner can normally be reached on M-F 7:30-5:00 Est.

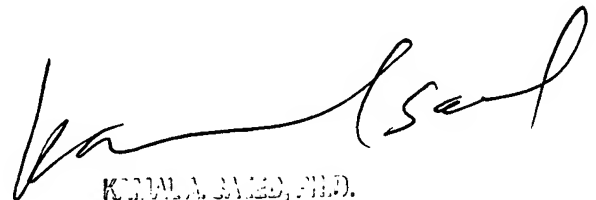
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph McKane can be reached on (571)272-0699. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Sun Jae Y. Loewe
Art Unit 1626



KENNETH A. SALS, FID.
PATENT EXAMINER